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EXAMINER

NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 11/18/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/633,463

Applicant(s)

ORR ET AL.

Examiner

Paulos M. Natnael

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-9,11,14 and 16 is/are rejected.
- 7) ☒ Claim(s) 3,6,10,12,13,15,17,18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1,2,4,5,7-9,11, 14 and 16** are again rejected under 35 U.S.C. 103(a) as being unpatentable over Tamir et al., U.S. Pat. No. 5,923,365.

Considering claim 1, Tamir et al. disclose the following claimed subject matter, note;

b) the claimed method of identifying a first portion of an image, is met by step 100, FIG.3A;

c) the claimed method of displaying the first portion, is met by step 100, Fig. 3A;

d) the method of detecting motion of an object within the portion of the image, met is by step 110, fig.3A;

e) the claimed method of selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image, and displaying the second portion is met by steps 146,150, and 160, Fig.3A;

Except for;

a) the claimed method of "beginning a zoom mode";

Regarding a), Tamir et al., does not specifically disclose a zoom mode. However, the zoom mode is well known in the art and Tamir et al. discloses, "The tracking procedure takes into account the fact that there may be a change of magnification (zoom in and out) and of objects' poses through the succession of frames." (col. 10, lines 10-13)

Therefore, it would have been obvious to the skilled in the art to modify the system of Tamir, to provide it with a zoom mode at the beginning of the process, to take account of the magnification or (zoom in and out) as Tamir et al clearly suggest, and in order to focus on the desired portion of the image for reliable and efficient processing.

Considering claim 2, the claimed when at least one edge of the second portion to the image extends beyond the image, terminating the zoom mode, is met by the step 170, where the system executes an analysis of disappearance/ reentry prediction for marked objects.

Considering claim 4, the method of claim 1, wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the step of detecting motion of an object within the portion of the image includes a step of examining MPEG2 motion vectors is met by the disclosure that "The optibase JPG-2000 board is using Motion JPEG algorithm for compression; other algorithm, such as MPEG, may also be used. (see col. 6, lines 56-58)

Considering claim 5, Tamir discloses the following claimed subject matter, note;

b) a video signal processor coupled to the tuner and operative to select a portion of the video image to provide a selected portion of the video image is met by Host computer 30 and the image analyzer 50 (FIG.1);

a) the video signal processor also operative, while all edges of the selected portion of the video image are within the video image to zoom to the selected portion of the video image, to detect movement of an object within the selected portion of the video image, and to select a second portion of the video image to redefine the selected portion of the video image, is met by Host computer 30 and the image analyzer 50 (FIG.1) ; (see col. 8, lines 53-54)

Except for;

a) the claimed tuner operative to receive a video image;

Regarding a), Tamir et al. do not disclose a tuner. However, Examiner takes an Official Notice here in that a tuner is a very well known device in the art and, therefore, it would have been obvious to the skilled in the art at the time the invention was made to provide a tuner device and modify the system of Tamir et al.

Considering claim 7, the television system of claim 5, wherein the television system is one of set top box, a desk top box, and a personal digital assistant is met by Fig.1;

Considering claim **8**, a method for providing a zoom video tracking image, comprising steps of beginning a zoom mode;

- a) identifying a first portion of an image;
- b) displaying the first portion in a zoom frame within a full frame of the image;
- c) detecting motion of an object within the zoom frame;
- d) selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and displaying the second portion in the zoom frame.

Regarding claim **8**, see rejection of claim 1;

Considering claim **9**, see rejection of claim 2;

Considering claim **11**, the method of claim 8, wherein the first portion of the image and the second portion of the image are MPEG2 images; and wherein the detecting motion of an object within the portion of the image includes a step of examining MPEG2 motion vectors.

Regarding claim **11**, see rejection of claim 4;

Considering claim **14**, Tamir et al. disclose the following claimed subject matter, note;

- a) a tuner operative to receive a video image;

- b) a video signal processor coupled to the tuner and operative to select a portion of a full frame of the video image to provide a selected portion of the video image;
- c) the video processor also operative, while all edges of the selected portion of the video image are within the video image, to zoom to the selected portion of the video image and display in a zoom frame, to detect movement of an object within the selected portion of the video image, and to select a second portion of the video image to redefine the selected portion of the video image and display in the zoom frame.

Regarding claim 14, see rejection of claim 8;

Considering claim **16**, see rejection of claim 4.

Response to Arguments

3. Applicant's arguments filed 4/21/03 have been fully considered but they are not persuasive. Response follows.

Applicant's Arguments

- a) Tamir fails to make obvious the beginning of a zoom mode as defined by Applicants' Specification. "Zooming allows a person watching television to magnify a selected portion of the television screen. The selected portion is a "zoom frame." The television displays the zoom frame, magnifying it to cover the entire screen, rather than the entire MPEG2 frames (i.e., the "full frames") as received by the television." (Page 2, First Paragraph; Emphasis Added). Examiner's citation to a tracking procedure that takes into account a change in magnification (zoom in and out) is wholly different from

*previous
argument
Response
inadvertently
added.*

Applicants' claimed invention. Tamir explains that the tracking technique is used to track a selected object throughout a succession of frames using a dynamical search window centered around the object location in the previous frame and performing the edge detection procedure inside this window. (Col. 9, Lines 52 - 60). Additionally, Tamir teaches that the tracking procedure takes into account that there may be a change in magnification and of objects' poses through the succession of frames. (Col. 10, Lines 10-13). Tamir teaches a system that can track an object when a cameraperson changes the magnification of a recorded image. (Emphasis Added.) A user of Tamir's system is unable to control the zoom percentage of any portion of the digital video.

b) Because Tamir is directed at a system that is unable to allow a user to zoom in upon a portion of an image, Applicants respectfully request a showing as to a reference that would make obvious the use of a zoom mode in connection with the editing system disclosed by Tamir. Furthermore, the remainder of Applicants' Claim 1 is not made obvious by the Tamir reference. The claimed method of identifying a first portion of an image is not met by step 100 of Figure 3A. Step 100 references the process in which the video encoder 20 grabs and digitizes the first video frame. (Col. 8, Lines 53-55; Emphasis Added).

c) Tamir fails to disclose the identification of a first portion of an image in connection to a selected zoom mode. As a result, Tamir fails to make obvious the remaining elements of Claim 1, namely the selection and display of a second portion of the image when

motion is detected of an object within the first portion of the image. Tamir does not make obvious any portion of Applicants' Claim 1.

d) With regard to Claim 2, Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Specifically, Applicants note that Tamir fails to make obvious any use of a zoom mode or the identification of a first or second portion of an image. Therefore, Tamir also fails to teach any subsequent limitation upon Claim 1. Specifically Tamir does not anticipate the step of terminating the zoom mode when at least one edge of the second portion of the image extends beyond the image.

e) Tamir does not distinguish between a portion of the image and the entire image whereby the portion of the image represents a magnified portion of the image as defined by a user's zoom parameters. Moreover, Applicants' claimed invention does not relate to the technique of highlighting as taught by Tamir.

f) With respect to Claim 4, Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Because Tamir does not anticipate the identifying of a first or second portion of an image and is only concerned with the entire camera field of view, Applicants maintain that Tamir cannot make obvious any subsequent limitation describing the type of image corresponding to a selected portion. (Emphasis Added). Furthermore, Tamir is silent as to the use of detecting motion of an object within the portion of the image by use of examining MPEG2 motion vectors. Applicants

respectfully request a showing including the column and line number within Tamir that teaches this limitation.

g) Furthermore, Applicants take notice that Claim 16 corresponds to the system claim of Claim 4 and was not rejected. For the foregoing reasons, Applicants maintain that Claim 16 is also in proper condition for allowance.

Response to Arguments

4. Applicant's arguments filed 8/29/03 have been fully considered but they are not persuasive. Response follows:

Applicant's Arguments

a) ... Accordingly, since Tamir teaches avoiding artifacts such as motion induced blur and aliasing and since Tamir teaches the identification of an object by highlighting it, Tamir teaches away from the claims because any zooming in on an object would aggravate motion induced blur, and possibly would aggravate edge and texture aliasing when applying a zoom function to the teachings of Tamir. As such, since the previously described portions of Tamir teach away from the claims, one skilled in the art would not be motivated to modify Tamir as suggested in the Office Action to perform a zoom function as claimed.

b) The only reference in Tamir related to a zoom function states "the tracking procedure takes into account the fact that there may be a change of magnification (zoom in and out) and of objects' poses throughout the succession of frames." (col 10, lines 10-13). However, the zoom function described is discussed in context with the problems encountered and identified as possible obstacles to the tracking procedure. (T 9, lines 20.-27).

c) Accordingly, taken into proper context, Tamir teaches the avoidance of zooming because zooming and attempting to track all moving objects in the scene (T 10, lines 28-30) would exasperate the problems and obstacles sought precisely to avoid.

Therefore, taking the teachings of Tamir into proper context shows that Tamir teaches a method and apparatus for tracking all moving objects in the scene (players, referees and the ball) by highlighting the objects of interest while avoiding the problems associated with such an endeavor by attempting to mitigate motion induced blur, antialiasing, and to accommodate other situations such as fusion,! slitting, and occlusion. Accordingly, not only does Tamir teach away from the zoom mode as required in the claims as filed, such a modification as asserted in the Office Action would indeed change the principle of operation of Tamir because modifying Tamir to zoom while tracking all moving objects would greatly increase problems associated with the tracking method of Tamir specifically sought to avoid...

Examiner's Response

a) to c) Tamir discloses "For objects typically characterized by a bounding rectangle larger than 10.times.10 pixels, reliable feature detection is expected and the correlation tracking method usually has a better probability of success than the edge tracking technique. A combination of these tracking methods and others may also be used. The tracking procedure takes into account the fact that there may be a change of magnification (zoom in and out) and of objects' poses through the succession of frames." (col. 10, lines 5-13) When tracking the objects, Tamir also tracks whether there is a change of magnification, that is, whether the camera is zooming in on an object or zooming out of an object. This clearly indicates that the system of Tamir must employ a zoom mode. And when the system zooms out of an object, the Zoom Mode would logically be off. Therefore, it would have been obvious to those with ordinary skill in the art to modify the system of Tamir and provide a Zoom Mode initially in order to take account of the magnification (zoom in and out) as Tamir et al. clearly teaches. **Nowhere does Tamir disclose or suggest that zooming onto an object would increase problems of tracking all the objects.** This is applicant's own interpretation, not Tamir's teaching. Tamir teaches taking into account the fact that there may be a change in magnification or zooming in and out, and the Examiner's reliance on this passage for motivation is certainly in proper context, not out of context at all. Therefore, the Applicant's argument in this regard is unpersuasive.

Conclusion


5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Paulos Natnael 
November 16, 2003


MICHAEL H. LEE
PRIMARY EXAMINER